

What is claimed is:

1. A filtration device comprising:

5 a filtration tank, having a filter bed for supporting a layer of first particulate filtration media; and

a cleansing mechanism, comprising:

10 a vertically oriented hollow cleansing tank provided in the filtration tank;

15 a cleansing means, for conveying the first filtration media upwards within the cleansing tank while cleansing the first filtration media; and

15 a contaminant expulsion means, for expelling contaminants separated from the first filtration media during cleansing to the exterior of the filtration tank; wherein:

20 during normal filtration, liquid which has been filtered by the filtration media is passed through the filter bed and discharged therethrough;

20 the filter bed comprises two vertically separated filter beds;

25 the upper filter bed comprises a great number of liquid passage portions, of a size which is difficult for the first filtration media to pass through; and

25 a layer of second filtration media, which are greater in size than the first filtration media, is provided between the two filter beds.

2. A filtration device as defined in Claim 1, wherein:

30 the cleansing means comprises a screw conveyor, which is suspended from the upper portion of the filtration tank; and

35 the screw conveyor is configured to be rotated by a drive portion, which is provided at the upper portion of the filtration tank.

3. A filtration device as defined in either one of Claims 1 or 2, wherein:

the upper filter bed is a mesh member, having mesh openings that constitute the liquid passage portions.

4. A filtration device as defined in any one of Claims 1, 2, and 3, wherein:

a plurality of strainers, for discharging the filtered liquid, are provided at the lower of the two filter beds.

5. A filtration device as defined in any one of Claims 1, 2, 3, and 4, further comprising:

liquid spraying portions, for spraying the second filtration media provided between the two filter beds from the exterior, provided on the outer wall of the filtration tank; wherein:

cleansing fluid is sprayed toward the layer of the second filtration media by the liquid spraying portions, to separate contaminants attached to the second filtration media by the stream of cleansing fluid.

6. A filtration device as defined in any one of Claims 1, 2, 3, 4, and 5, further comprising:

a vibration generating device, for imparting vibration to the second filtration media provided between the two filter beds; wherein:

vibration is propagated toward the layer of the second filtration media by the vibration generating device, to separate contaminants attached to the second filtration media by the vibration imparted thereto.